IMPROVED PROFITABILITY BY RE-ORGANISING SUGARCANE SUPPLY: A DECISION SUPPORT APPROACH

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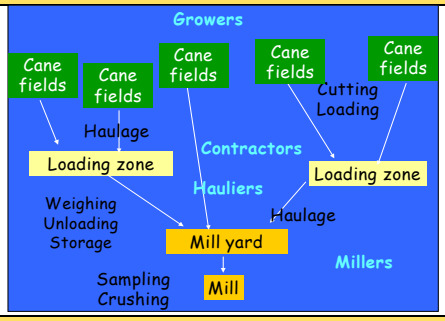
Managing mill supply in the sugar industry : a co-ordination issue between numerous stakeholders

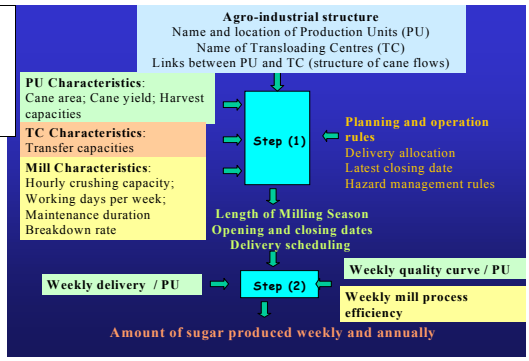


How to share the potential sugar value between growers and millers?
- Selection of a relevant cane payment system
- Assessment of cane quality along the supply chain
- Control of production costs from fields to the mill

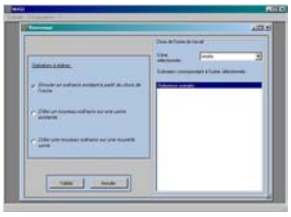
How to organize mill supply?
- Choice of mill opening and closure dates
- Rules of delivery allocation amongst growers

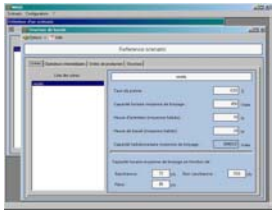
A decision support system based on the modelling of cane flows and a simulation tool: MAGI

The conceptual framework



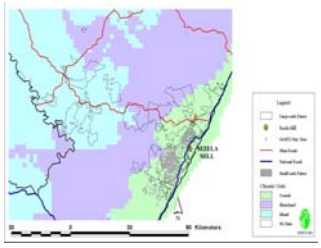
A simulation tool



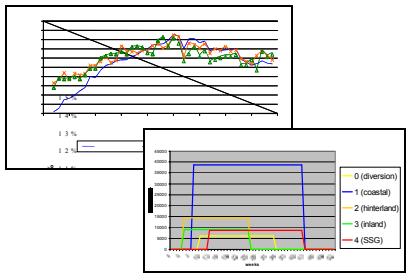


Assessing the potential impact of quality-based delivery allocations on sugar production at the mill area level

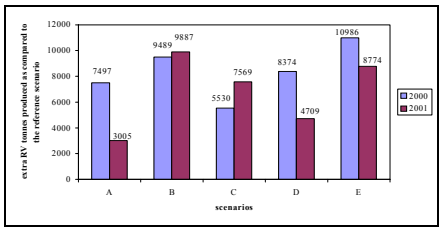
Definition of homogeneous quality sub-areas



Design of new delivery allocation patterns



Simulation and comparison of total sugar production



1 to 5% gain compared with the benchmark scenario

The result feed back the discussion between growers and millers about the scenario feasability and new issues to be adressed

- Agricultural impacts : cane yields, infestation of stem borer
- Harvest organization at farm level : outsourcing, impact on labour force
- Transport organization : logistic, optimisation of fleet size
- Evolution of cane payment systems